

DERWENT-ACC-NO: 1977-67172Y

DERWENT-WEEK: 197738

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TITLE: Propulsion of gas turbine - by
stagewise catalytic oxidation of fuel to suppress
formation of nitrogen oxides (NL 12.9.77)

PATENT-ASSIGNEE: EXXON RES & ENG CO[ESSO]

PRIORITY-DATA: 1976US-0664621 (March 8, 1976)

PATENT-FAMILY:

PUB-NO	PAGES	PUB-DATE	MAIN-IPC
DE 2708940 A		September 15, 1977	N/A
000	N/A		
CA 1070963 A		February 5, 1980	N/A
000	N/A		
FR 2353708 A		February 3, 1978	N/A
000	N/A		
GB 1578665 A		November 5, 1980	N/A
000	N/A		
IT 1075813 B		April 22, 1985	N/A
000	N/A		
JP 52115911 A		September 28, 1977	N/A
000	N/A		
NL 7702494 A		September 12, 1977	N/A
000	N/A		

INT-CL (IPC): C10J001/02, F02C003/00 , F02C007/00 ,
F02G000/00 ,
F23R001/04 , F23R003/00

ABSTRACTED-PUB-NO: DE 2708940A

BASIC-ABSTRACT:

Gas turbine is propelled by mixing fuel with air in a
weight ratio of
0.001-0.03; causing a partial oxidation (<70% w.r.t. the

complete oxidation) by contacting the gas mixt. with a prim. catalyst bed; and then completing the oxidation by contacting the gas mixt. with one or more sec. catalyst beds. All the catalysts are selected from elements of gps. IB, IIB, IIIB, IVB, VB, VIB, VIIB or VIII, their mixts. or alloys deposited on expanded metal sheets or ceramic substrates (the catalysts in each stage may, however, differ one from the other).

The oxidation is at 65-1540 degrees C. The prim. catalyst is pref. Pt, Cu-Ni or Ni-Cr mesh. Pref. the gases are contacted with three different catalysts, viz. first with Pt at 117-649 degrees C; then with Cu-Ni up to 871 degrees C; and with Ni-Cr mesh at 871-1316 degrees C.

The temp. of the gas mixt. increases gradually, and is lower than in the conventional operation of a gas turbine. For this reason the formation of NOx is suppressed (the NOx content of the exhaust gases is <10 ppm).

TITLE-TERMS: PROPEL GAS TURBINE STAGE CATALYST OXIDATION
FUEL SUPPRESS
FORMATION NITROGEN

DERWENT-CLASS: H06 Q52 Q73

CPI-CODES: H06-C01A; H06-C03B; N01; N02; N03;